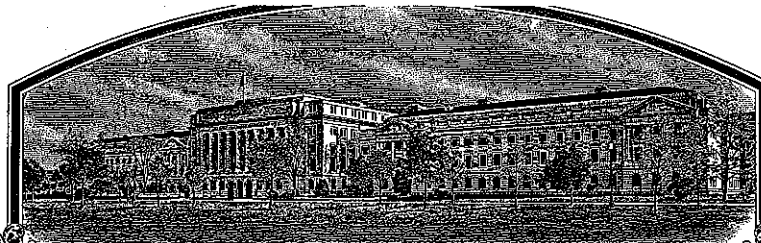


No.

200600170



# THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

*Syngenta Seeds, Inc.*

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

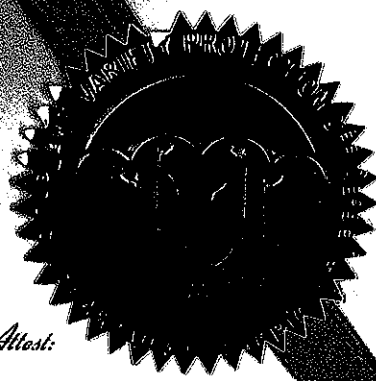
NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE FOREGOING PURPOSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

BEAN, GARDEN

'HERRERA'

*In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this ninth day of April, in the year two thousand and seven.*

Attest:



*[Signature]*

Commissioner  
Plant Variety Protection Office  
Agricultural Marketing Service

*[Signature]*

Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE  
(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

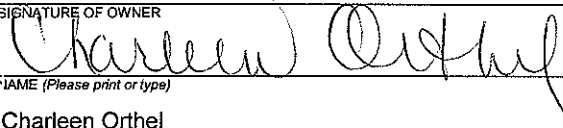
Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF OWNER <b>Syngenta Seeds, Inc</b>		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME	3. VARIETY NAME <b>Herrera</b>
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country) <b>600 N. Armstrong Pl. Boise, Idaho 83704</b>		5. TELEPHONE (include area code) <b>(208) 322-7272</b>	<b>FOR OFFICIAL USE ONLY</b> PVPO NUMBER <b>2006 00 170</b> FILING DATE <b>MARCH 30, 2006</b>
		6. FAX (include area code) <b>(208) 327-9319</b>	
7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION (corporation, partnership, association, etc.) <b>Corporation</b>	8. IF INCORPORATED, GIVE STATE OF INCORPORATION <b>Delaware</b>	9. DATE OF INCORPORATION <b>February 25, 1975</b>	
10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION. (First person listed will receive all papers) <b>Charleen Ortel Syngenta Seeds, Inc. 600 N. Armstrong Pl. PO Box 4188 Boise, ID 83711-4188 7/22/07</b> <b>Kim Briggs 6338 Highway 20-26 Nampa ID 83687</b>			FILING AND EXAMINATION FEES: <b>\$4,382.00</b> DATE <b>3/30/06</b> CERTIFICATION FEE: <b>\$768.00</b> DATE <b>3/06/2006</b>
11. TELEPHONE (Include area code) <b>(208) 327-7246 208-465-8522</b>	12. FAX (Include area code) <b>(208) 327-9319 208-467-4559</b>	13. E-MAIL <b>charleen.ortel@syngenta.com Kim.briggs@syngenta.com</b>	
14. CROP KIND (Common Name) <b>Bean, Garden</b>	16. FAMILY NAME (Botanical) <b>Fabaceae</b>	18. DOES THE VARIETY CONTAIN ANY TRANSGENES? (OPTIONAL) <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF SO, PLEASE GIVE THE ASSIGNED USDA-APHIS REFERENCE NUMBER FOR THE APPROVED PETITION TO DEREGULATE THE GENETICALLY MODIFIED PLANT FOR COMMERCIALIZATION.	
15. GENUS AND SPECIES NAME OF CROP <b>Phaseolus vulgaris L.</b>	17. IS THE VARIETY A FIRST GENERATION HYBRID? <input type="checkbox"/> YES <input type="checkbox"/> NO	20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A CLASS OF CERTIFIED SEED? (See Section 83(a) of the Plant Variety Protection Act) <input type="checkbox"/> YES (If "yes", answer items 21 and 22 below) <input checked="" type="checkbox"/> NO (If "no", go to item 23)	
19. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse) a. <input checked="" type="checkbox"/> Exhibit A. Origin and Breeding History of the Variety b. <input checked="" type="checkbox"/> Exhibit B. Statement of Distinctness c. <input checked="" type="checkbox"/> Exhibit C. Objective Description of Variety d. <input type="checkbox"/> Exhibit D. Additional Description of the Variety (Optional) e. <input checked="" type="checkbox"/> Exhibit E. Statement of the Basis of the Owner's Ownership f. <input checked="" type="checkbox"/> Exhibit F. Declaration Regarding Deposit g. <input checked="" type="checkbox"/> Voucher Sample (3,000 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository) h. <input checked="" type="checkbox"/> Filing and Examination Fee (\$4,382), made payable to "Treasurer of the United States" (Mail to the Plant Variety Protection Office)		21. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF CLASSES? <input type="checkbox"/> YES <input type="checkbox"/> NO IF YES, WHICH CLASSES? <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED	
23. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U. S. OR OTHER COUNTRIES? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. (Please use space indicated on reverse.)		22. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? <input type="checkbox"/> YES <input type="checkbox"/> NO IF YES, SPECIFY THE NUMBER 1,2,3, etc. FOR EACH CLASS. <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED (If additional explanation is necessary, please use the space indicated on the reverse.)	
24. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT (PLANT BREEDER'S RIGHT OR PATENT)? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO IF YES, PLEASE GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. (Please use space indicated on reverse.)			

25. The owners declare that a viable sample of basic seed of the variety has been furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.

The undersigned owner(s) is(are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Owner(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF OWNER 		SIGNATURE OF OWNER	
NAME (Please print or type) <b>Charleen Ortel</b>		NAME (Please print or type)	
CAPACITY OR TITLE <b>IP Coordinator</b>	DATE <b>March 27, 2006</b>	CAPACITY OR TITLE	DATE

(See reverse for instructions and information collection burden statement)

**GENERAL INSTRUCTIONS:** To be effectively filed with the Plant Variety Protection Office (PVPO), **ALL** of the following items must be received in the PVPO: (1) Completed application form signed by the owner; (2) completed exhibits A, B, C, E, F; (3) for a tuber reproduced variety, verification that a viable (*in the sense that it will reproduce an entire plant*) tissue culture will be deposited and maintained in an approved public repository; and (4) payment by credit card or check drawn on a U.S. bank for \$4,382 (\$518 filing fee and \$3,864 examination fee), payable to "Treasurer of the United States" (See Section 97.6 of the Regulations and Rules of Practice). **NEW:** With the application for a seed reproduced variety or by direct deposit soon after filing, the applicant must provide at least 3,000 viable untreated seeds of the variety *per se*, and for a hybrid variety at least 3,000 untreated seeds of each line necessary to reproduce the variety. Partial applications will be held in the PVPO for not more than 90 days; then returned to the applicant as un-filed. Mail application and other requirements to Plant Variety Protection Office, AMS, USDA, Room 401, NAL Building, 10301 Baltimore Avenue, Beltsville, MD 20705-2351. Retain one copy for your files. All items on the face of the application are self explanatory unless noted below. Corrections on the application form and exhibits must be initialed and dated. **DO NOT** use masking materials to make corrections. If a certificate is allowed, you will be requested to send a payment by credit card or check payable to "Treasurer of the United States" in the amount of \$768 for issuance of the certificate. Certificates will be issued to owner, not licensee or agent.

**NOTES:** It is the responsibility of the applicant/owner to keep the PVPO informed of any changes of address or change of ownership or assignment or owner's representative during the life of the application/certificate. The fees for filing a change of address; owner's representative; ownership or assignment; or any modification of owner's name is specified in Section 97.175 of the regulations. (See Section 101 of the Act, and Sections 97.130, 97.131, 97.175(h) of the Regulations and Rules of Practice.)

**Plant Variety Protection Office**  
**Telephone:** (301) 504-5518 **FAX:** (301) 504-5291  
**General E-mail:** PVPOmail@usda.gov  
**Homepage:** <http://www.ams.usda.gov/science/pvpo/PVPindex.htm>

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#### **SPECIFIC INSTRUCTIONS:**

To avoid conflict with other variety names in use, the applicant must check the appropriate recognized authority and **provide evidence** that the permanent name of the application variety (even if it is a parental, inbred line) has been cleared by the appropriate recognized authority before the Certificate of Protection is issued. For example, for agricultural and vegetable crops, contact: U.S. Department of Agriculture, Agricultural Marketing Service, Livestock and Seed Programs, **Seed Regulatory and Testing Branch**, 801 Summit Crossing Place, Suite C, Gastonia, North Carolina 28054-2193 Telephone: (704) 810-8870.  
<http://www.ams.usda.gov/lsg/seed.htm>.

#### **ITEM**

- 19a. Give:
- (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method;
  - (2) the details of subsequent stages of selection and multiplication;
  - (3) evidence of uniformity and stability; and
  - (4) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified
- 19b. Give a summary of the variety's distinctness. Clearly state how this application variety may be distinguished from all other varieties in the same crop. If the new variety is most similar to one variety or a group of related varieties:
- (1) identify these varieties and state all differences objectively;
  - (2) attach replicated statistical data for characters expressed numerically and demonstrate that these are clear differences; and
  - (3) submit, if helpful, seed and plant specimens or photographs (prints) of seed and plant comparisons which clearly indicate distinctness.
- 19c. Exhibit C forms are available from the PVPO Office for most crops; specify crop kind. Fill in Exhibit C (Objective Description of Variety) form as completely as possible to describe your variety.
- 19d. Optional additional characteristics and/or photographs. Describe any additional characteristics that cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, etc.
- 19e. Section 52(5) of the Act requires applicants to furnish a statement of the basis of the applicant's ownership. An Exhibit E form is available from the PVPO.
20. If "Yes" is specified (*seed of this variety be sold by variety name only, as a class of certified seed*), the applicant **MAY NOT** reverse this affirmative decision after the variety has been sold and so labeled, the decision published, or the certificate issued. However, if "No" has been specified, the applicant may change the choice. (See Regulations and Rules of Practice, Section 97.103).
23. See Sections 41, 42, and 43 of the Act and Section 97.5 of the regulations for eligibility requirements.
24. See Section 55 of the Act for instructions on claiming the benefit of an earlier filing date.

**22. CONTINUED FROM FRONT** (Please provide a statement as to the limitation and sequence of generations that may be certified.)

**23. CONTINUED FROM FRONT** (Please provide the date of first sale, disposition, transfer, or use for each country and the circumstances, if the variety (including any harvested material) or a hybrid produced from this variety has been sold, disposed of, transferred, or used in the U.S. or other countries.)

Apr. 2005: France, intercompany transfer to Syngenta Seeds, SAS, disposition tbd by Syngenta SAS; Apr. 2005: USA, fresh packaging adaptability trial

**24. CONTINUED FROM FRONT** (Please give the country, date of filing or issuance, and assigned reference number, if the variety or any component of the variety is protected by intellectual property right (Plant Breeder's Right or Patent).)

PBR application: European Community, December, 23, 2005, #2005/2708. Not yet granted

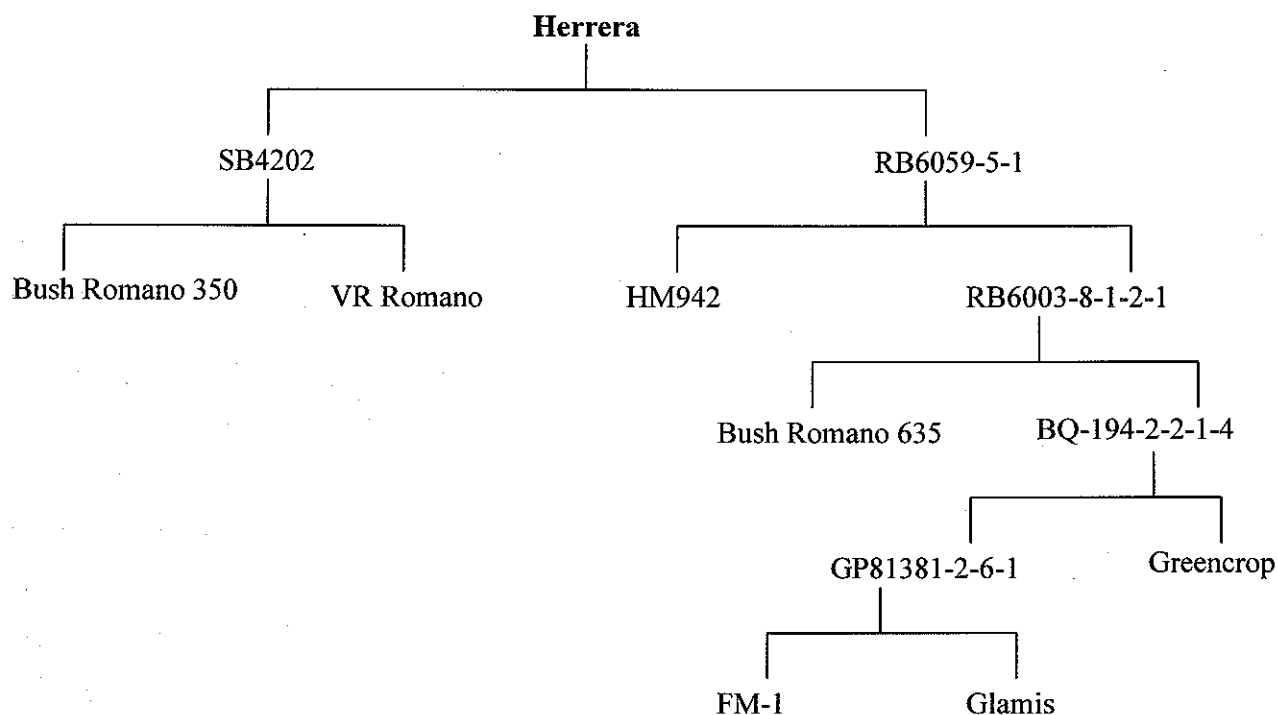
According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 1.4 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, sexual orientation, marital or family status, political beliefs, parental status, or protected genetic information. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call 202-720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.

**Exhibit A**  
**Origin and Breeding History**  
**'Herrera'**

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'Herrera' originated from a hand pollinated cross between Syngenta Seeds, Inc. breeding lines SB4202 and RB6059-5-1. RB6003-8-1-2-1, BQ-194-2-2-1-4, and GP81381-2-6-1 are Syngenta Seeds, Inc. breeding lines. Bush Romano 350 and Bush Romano 635 are Syngenta Seeds, Inc. varieties. HM942 is a Harris Moran Seed Company variety, VR Romano released by ARS/USDA at Prosser, WA. Greencrop is a release from the New Hampshire Agricultural Experiment Station at Durham, NH. FM-1 is Ferry Morris variety. Glamis was released by the Scottish Horticultural Research Institute.

Mass selection breeding method was followed from generations F2 through F4 to accumulate the traits of upright plant structure and stress tolerance. Selection by pedigree method for yield, compact bush habit, and commercial Romano-type pods was applied in F5 and F6 generations. The F7 generation was bulk harvested to supply a seed source for further increases. 'Herrera' has been uniform and genetically stable for four generations of increases from the original F7 generation. No variants were observed.

**Exhibit B**  
**Statement of Distinctness**  
**'Herrera'**

'Herrera' is a Romano type bean suitable for processing markets that closely resembles the variety 'Roma II'. 'Herrera' differs statistically from 'Roma II' in the following traits:

1. In 2004 and 2005 'Herrera' and 'Roma II' were statistically different in plant spread in Minnesota. Both years 'Roma II' had a greater plant spread than 'Herrera'. 'Roma II' averaged 4.6 (2004) and 4.3 cm (2005) greater in plant spread than 'Herrera' (Attachment B-1 and B-4).
2. There was a significant difference in pod depth in Minnesota in 2004. 'Herrera' averaged 9.08 mm 'Roma II' averaged 8.18 mm (Attachment B-2).
3. 'Herrera' and 'Roma II' were statistically different in plant height in Minnesota in 2005. 'Roma II' was 4.4 cm greater in plant height with an average of 40.8 cm whereas Herrera averaged 36.4 cm (Attachment B-3).
4. In 2005, there was a significant difference in 'Herrera' and 'Roma II' pod width in Minnesota. 'Roma II' pod width average was 16.39 cm and 'Herrera' was 15.65 cm (Attachment B-5).

The above values for plant spread, pod depth, pod width and plant height are based on average measurements from Minnesota collected during growing season of years 2004 and 2005. Twenty plants of each variety were measured for plant spread, pod depth, pod width and plant height. Each plot was comprised of 100 plants. All statistical computations were carried out using Statistix 8.0.

**Exhibit B**  
**Statement of Distinctness**  
**'Herrera'**

Explanation of statistical analysis variables used in the following attachments

HSPDMN04 = Herrera, Plant Spread, Minnesota, 2004  
RSPDMN04 = Roma II, Plant Spread, Minnesota, 2004

HPDTHMN04= Herrera, Pod Depth, Minnesota, 2004  
RPDTHMN04= Roma II, Pod Depth, Minnesota, 2004

HPTHTMN05= Herrera, Plant Height, Minnesota, 2005  
RPTHTMN05= Roma II, Plant Height, Minnesota, 2005

HSPDMN05 = Herrera, Plant Spread, Minnesota, 2005  
RSPDMN05 = Roma II, Plant Spread, Minnesota, 2005

HPWTHMN05= Herrera, Pod Width, Minnesota, 2005  
RPWTHMN05= Roma II, Pod Width, Minnesota, 2005

2006 00 170

Statistix 8.0  
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**Descriptive Statistics**

Variable	N	Mean	SD	Minimum	Maximum
HSPDMN04	20	30.900	4.5642	23.000	40.000
RSPDMN04	20	35.550	6.4193	25.000	52.000

**One-Way AOV for: HSPDMN04 RSPDMN04**

Source	DF	SS	MS	F	P
Between	1	216.22	216.225	6.97	0.0120
Within	38	1178.75	31.020		
Total	39	1394.97			

Grand Mean 33.225 CV 16.76

	Chi-Sq	DF	P
Bartlett's Test of Equal Variances	2.11	1	0.1460
Cochran's Q	0.6642		
Largest Var / Smallest Var	1.9781		

Component of variance for between groups	9.26026
Effective cell size	20.0

Variable	Mean
HSPDMN04	30.900
RSPDMN04	35.550
Observations per Mean	20
Standard Error of a Mean	1.2454
Std Error (Diff of 2 Means)	1.7612

**LSD All-Pairwise Comparisons Test**

Variable	Mean	Homogeneous Groups
RSPDMN04	35.550	A
HSPDMN04	30.900	B

Alpha	0.05	Standard Error for Comparison	1.7612
Critical T Value	2.024	Critical Value for Comparison	3.5654
All 2 means are significantly different from one another.			

Attachment B-1  
Plant Spread (cm)  
Descriptive Statistics, AOV, and LSD  
'Herrera' vs. 'Roma II'  
Stanton, Minnesota  
2004

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Statistix 8.0  
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**Descriptive Statistics**

Variable	N	Mean	SD	Minimum	Maximum
HSPDMN05	20	22.075	3.3884	16.000	28.000
RSPDMN05	20	26.400	5.1748	19.000	36.000

**One-Way AOV for: HSPDMN05 RSPDMN05**

Source	DF	SS	MS	F	P
Between	1	187.056	187.056	9.78	0.0034
Within	38	726.937	19.130		
Total	39	913.994			

Grand Mean 24.238 CV 18.05

	Chi-Sq	DF	P
Bartlett's Test of Equal Variances	3.23	1	0.0725
Cochran's Q	0.6999		
Largest Var / Smallest Var	2.3325		

Component of variance for between groups 8.39632  
Effective cell size 20.0

Variable	Mean
HSPDMN05	22.075
RSPDMN05	26.400
Observations per Mean	20
Standard Error of a Mean	0.9780
Std Error (Diff of 2 Means)	1.3831

**LSD All-Pairwise Comparisons Test**

Variable	Mean	Homogeneous Groups
RSPDMN05	26.400	A
HSPDMN05	22.075	B

Alpha 0.05 Standard Error for Comparison 1.3831  
Critical T Value 2.024 Critical Value for Comparison 2.8000  
All 2 means are significantly different from one another.

**Attachment B-4**  
**Plant Spread**  
**Descriptive Statistics, AOV, LSD**  
**'Herrera' vs. 'Roma II'**  
**Stanton, Minnesota**  
**2005**

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2006 00 170

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**Descriptive Statistics**

Variable	N	Mean	SD	Minimum	Maximum
HPDTHMN04	20	9.0890	0.3939	8.4000	10.190
RPDTHMN04	20	8.1805	0.3774	7.4000	8.7700

**One-Way AOV for: HPDTHMN04 RPDTHMN04**

Source	DF	SS	MS	F	P
Between	1	8.2537	8.25372	55.5	0.0000
Within	38	5.6531	0.14877		
Total	39	13.9068			

Grand Mean 8.6347      CV 4.47

	Chi-Sq	DF	P
Bartlett's Test of Equal Variances	0.03	1	0.8537
Cochran's Q	0.5214		
Largest Var / Smallest Var	1.0895		

Component of variance for between groups      0.40525  
Effective cell size      20.0

Variable	Mean
HPDTHMN04	9.0890
RPDTHMN04	8.1805
Observations per Mean	20
Standard Error of a Mean	0.0862
Std Error (Diff of 2 Means)	0.1220

**LSD All-Pairwise Comparisons Test**

Variable	Mean	Homogeneous Groups
HPDTHMN04	9.0890	A
RPDTHMN04	8.1805	B

Alpha      0.05      Standard Error for Comparison      0.1220  
Critical T Value      2.024      Critical Value for Comparison      0.2469  
All 2 means are significantly different from one another.

**Attachment B-2**  
**Pod Depth (mm)**  
**Descriptive Statistics, AOV, LSD**  
**'Herrera' vs. 'Roma II'**  
**Stanton, Minnesota**  
**2004**

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Statistix 8.0  
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### Descriptive Statistics

Variable	N	Mean	SD	Minimum	Maximum
HPTHTMN05	20	36.400	2.0105	33.000	40.000
RPTHTMN05	20	40.800	4.0341	35.000	49.000

### One-Way AOV for: RPTHTMN05 HPTHTMN05

Source	DF	SS	MS	F	P
Between	1	193.600	193.600	19.1	0.0001
Within	38	386.000	10.158		
Total	39	579.600			

Grand Mean 38.600 CV 8.26

	Chi-Sq	DF	P
Bartlett's Test of Equal Variances	8.33	1	0.0039
Cochran's Q	0.8010		
Largest Var / Smallest Var	4.0260		

Component of variance for between groups 9.17211  
Effective cell size 20.0

Variable	Mean
RPTHTMN05	40.800
HPTHTMN05	36.400
Observations per Mean	20
Standard Error of a Mean	0.7127
Std Error (Diff of 2 Means)	1.0079

### LSD All-Pairwise Comparisons Test

Variable	Mean	Homogeneous Groups
RPTHTMN05	40.800	A
HPTHTMN05	36.400	B

Alpha 0.05 Standard Error for Comparison 1.0079  
Critical T Value 2.024 Critical Value for Comparison 2.0403  
All 2 means are significantly different from one another.

Attachment B-3  
Plant Height (cm)  
Descriptive Statistics, AOV, LSD  
'Herrera' vs. 'Roma II'  
Stanton, Minnesota  
2005

Statistix 8.0  
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### Descriptive Statistics

Variable	N	Mean	SD	Minimum	Maximum
HPWTHMN05	20	15.659	0.6092	14.470	16.960
RPWTHMN05	20	16.393	0.7396	14.870	17.690

### One-Way AOV for: HPWTHMN05 RPWTHMN05

Source	DF	SS	MS	F	P
Between	1	5.3876	5.38756	11.7	0.0015
Within	38	17.4448	0.45907		
Total	39	22.8324			

Grand Mean 16.026 CV 4.23

	Chi-Sq	DF	P
Bartlett's Test of Equal Variances	0.69	1	0.4052
Cochran's Q	0.5958		
Largest Var / Smallest Var	1.4742		

Component of variance for between groups 0.24642  
Effective cell size 20.0

Variable	Mean
HPWTHMN05	15.659
RPWTHMN05	16.393
Observations per Mean	20
Standard Error of a Mean	0.1515
Std Error (Diff of 2 Means)	0.2143

### LSD All-Pairwise Comparisons Test

Variable	Mean	Homogeneous Groups
RPWTHMN05	16.393	A
HPWTHMN05	15.659	B

Alpha 0.05 Standard Error for Comparison 0.2143  
Critical T Value 2.024 Critical Value for Comparison 0.4337  
All 2 means are significantly different from one another.

Attachment B-5  
Pod Width  
Descriptive Statistics, AOV, LSD  
'Herrera' vs. 'Roma II'  
Stanton, Minnesota  
2005

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 3 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

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To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410, or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
SCIENCE AND TECHNOLOGY  
PLANT VARIETY PROTECTION OFFICE  
BELTSVILLE, MD 20705

Exhibit C

OBJECTIVE DESCRIPTION OF VARIETY  
Garden Bean (*Phaseolus vulgaris* L.)

NAME OF APPLICANT (S)  Syngenta Seeds, Inc	TEMPORARY OR EXPERIMENTAL DESIGNATION	VARIETY NAME  Herrera
ADDRESS (Street and No. or RD No., City, State, Zip Code, and Country)  600 N. Armstrong Pl. Boise, ID 83704		FOR OFFICIAL USE ONLY  PVPO NUMBER  2006 00 170

PLEASE READ ALL INSTRUCTIONS CAREFULLY:

Place the appropriate number that describes the varietal character of this variety in the boxes below. Place a zero in the first box (e.g.,    or   ) when number is either 99 or less or 9 or less respectively. Data for quantitative plant characters should be based on a minimum of 100 plants. Comparative data should be determined from varieties centered in the same trial. Measured data should be for SPACED PLANTS. Ranges should also be given. Royal Horticultural Society or any recognized color standard may be used to determine plant colors; designate system used: \_\_\_\_\_  
Please answer all questions for your variety; lack of response may delay progress of your application.

1. TYPE:

1 = Garden 2 = Flageolet 3 = Romano

2. MARKET MATURITY:

Days to Edible Pods

Heat Units to Edible Pods

Number of Days Earlier Than

Same As

Number of Days Later Than

Comparison Variety

Comparison Varieties

- 1 = Tender crop 2 = Kentucky Wonder  
3 = Gold rush 4 = Slenderette  
5 = Gitana 6 = Provider  
7 = Bush Blue Lake 290  
8 = Other (Specify Below) Roma II

3. PLANT:

cm Spacing Between Plants in a Row

Habit

- 1 = Determinate  
2 = Indeterminate, Erect Stem and Branches  
3 = Indeterminate with Weak and Prostrate Stem and Branches  
4 = Indeterminate Climbing Habit with Weak, Long, and Twisted Stem and Branches

cm Height

cm Shorter Than

Same Height As

cm Taller Than

Comparison Variety

Use Comparison Varieties from Section 2

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## 3. PLANT: (continued)

27 cm Spread

06 cm Narrower Than

Same Width As

cm Wider Than

1	}	Comparison Variety
7		
-		

None
Use Comparison Varieties from Section 2

3 Pod Position: 1 = Low 2 = High 3 = Scattered

2 Bush Form (Illustrated Below)



1 = Spherical Bush Form



2 = Stem Bush Form



3 = Wide Bush Form



4 = High Bush Form

5 = Other (Specify) \_\_\_\_\_

## 4. LEAVES:

3 Surface: 1 = Dull 2 = Glossy 3 = Indeterminate

2 Size: 1 = Small (Gitana) 2 = Medium 3 = Large (Tender Crop)

2 Color: 1 = Light Green (as Light or Lighter than Gold Rush)  
2 = Medium Green  
3 = Dark Green (as Dark or Darker than Bush Blue Lake 290)

## 5. ANTHOCYANIN PIGMENT:

(1 = Absent

2 = Present)

1 Flowers

1 Stems

1 Pods

1 Seeds

1 Leaves

1 Petioles

1 Peduncles

1 Nodes

## 6. FLOWER COLOR AND DAYS TO BLOOM:

2 Color of Standard

1 Color of Wings

2 Color of Keel

40 Days to 50% Bloom

Flower Color Choices

1 = White 2 = Cream

3 = Pink 4 = Lilac

5 = Purple 6 = Blue

7 = Other (Specify) \_\_\_\_\_

## 7. PODS (Edible Maturity):

2 Exterior Color:  
(Fresh)

1 = Light Green (as Light or Lighter than Provider)

2 = Medium Green

3 = Dark Green (as Dark or Darker than Bush Blue Lake 290)

4 = Yellow (Gold Rush)

5 = Green-red Variegated (Horticultural)

6 = Other (Specify) \_\_\_\_\_

2 Processed Pods (Exterior Color):

1 = Light (Tender Crop)

2 = Dark (Bush Blue Lake 290)

1 Dry Pod Color:

1 = Buckskin (Sprite)

2 = Green, Persistent Chlorophyll (Hystyle)

## 7. PODS (continued):

1

Cross Section Pod Shape:  
(Middle of the Pod)

1 = Flat

2 = Heart (Pear)

3 = Round

4 = Figure Eight



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2

Crease Back:

1 = Present

2 = Absent

2

Pubescence:

1 = None (Slenderette)

2 = Sparse

3 = Considerable (Provider or Sprite)

3

Constriction (Interlocular Cavitation):

1 = None 2 = Slight 3 = Deep

13

mm Spur Length

2

Fiber:

1 = None (Bush Blue Lake 290)

2 = Sparse

3 = Considerable (Sprite)

6

Number of Seeds per Pod

2

Suture String:

1 = Present

2 = Absent

2

Seed Development: 1 = Slow (Bush Blue Lake 290)

2 = Medium

3 = Fast (Provider)

1

Machine Harvest:

1 = Adapted

2 = Not Adapted

Percent sieve size distribution at optimum maturity for not-flat pods

Not applicable, Flat pods

4.76 to 5.76mm	5.76 to 7.34mm	7.34 to 8.34mm	8.34 to 9.53mm	9.53 to10.72 mm	>10.72mm	
%	%	%	%	%	%	
3 Sieve	<div><div></div><div></div></div>	cm Length	<div><div></div><div></div></div>	mm width	<div><div></div><div></div></div>	Total mm Thickness
4 Sieve	<div><div></div><div></div></div>	cm Length	<div><div></div><div></div></div>	mm width	<div><div></div><div></div></div>	Total mm Thickness
5 Sieve	<div><div></div><div></div></div>	cm Length	<div><div></div><div></div></div>	mm width	<div><div></div><div></div></div>	Total mm Thickness
6 Sieve	<div><div></div><div></div></div>	cm Length	<div><div></div><div></div></div>	mm width	<div><div></div><div></div></div>	Total mm Thickness

## 8. SEED COLOR:

3

Seed Coat Luster: 1 = Shiny 2 = Dull 3 = Semi-Shiny 4 = Variable

1

Seed Coat: 1 = Monochrome 2 = Polychrome

01

Primary Color:

1 = White

2 = Yellow

3 = Buff

4 = Tan

5 = Brown

6 = Pink

7 = Red

8 = Purple

9 = Blue

10 = Black

11 = Other

+

Secondary Color:

1 = White

2 = Yellow

3 = Buff

4 = Tan

5 = Brown

6 = Pink

7 = Red

8 = Purple

9 = Blue

10 = Black

11 = Other

.

Seed Coat Pattern:

1 = Solid

1 = Splashed

3 = Mottled

4 = Striped

5 = Flecked

6 = Dotted

2

Hilar Ring:

1 = Absent

2 = Present

01

Hilar Ring Color:

1 = White

2 = Yellow

3 = Buff

4 = Tan

5 = Brown

6 = Pink

7 = Red

8 = Purple

9 = Blue

10 = Black

11 = Other

## 9. SEED SHAPE AND SIZE:

1

Hilum View:



1 = Elliptical



2 = Oval



3 = Round

1

Cross Section:

1 = Elliptical

2 = Oval

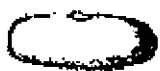
3 = Cordate

4 = Round

## 9. SEED SHAPE AND SIZE: (continued)

1

Side View:



1 = Oval to Oblong



2 = Round



3 = Reniform

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45

gm/100 Seeds

02

gm/100 Seeds Lighter Than

☐

None

gm/100 Seeds Same As

☐

Comparison Variety

05

gm/100 Seeds Heavier Than

☐

## 10. DISEASE RESISTANCE: 0 = Not Tested 1 = Susceptible 2 = Resistant 3 = Intermediate 4 = Tolerant

0

Anthracnose (*Colletotrichum lindemuthianum*)☐

Race Alpha

☐

Race Beta

☐

Race Gamma

☐

Race Delta

☐

Race Epsilon

☐

Race Lambda

☐

Race Kappa

☐

Specify Race

0

Bean Rust (*Uromyces appendiculatus*)☐

Race 38

☐

Race 39

☐

Race 40

☐

Race 44

☐

Race 45

☐

Race 46

☐

Race 49

☐

Race 50

☐

Race 51

☐

Race 52

☐

Race 54

☐

Race 56

☐

Race 59

☐

Specify Race

0

Powdery Mildew (*Erysiphe polygoni*)

0

Fusarium Root Rot (*Fusarium solani* f. sp. *phaseoli*)

0

Pythium Root Rot (*Pythium* spp.)

0

Aphanomyces Root Rot (*Aphanomyces euteiches*)

0

Rhizoctonia Root Rot (*Rhizoctonia solani*)

0

Pythium Blight or Aereal Pythium (*Pythium ultimum*)

0

Angular Leaf Spot (*Isariopsis griseola*)

0

Bacterial Wilt (*Corynebacterium flaccumfaciens* subsp. *flaccumfaciens*)

3

Bacterial Brown Spot (*Pseudomonas syringae* pv. *syringae*)

0

Common Bacterial Blight (*Xanthomonas campestris* pv. *phaseoli*)

0

Halo Blight (*Pseudomonas syringae* pv. *phaseolicola*)☐

Race 1

☐

Race 2

0

Clover Yellow Vein Virus (CYVV)

0

Bean Common Mosaic Virus (BCMV)

☐

BV1

☐

NY15

☐

NL2

☐

NL3

☐

NL4

☐

NL8

☐

Florida

☐

Idaho

☐

Mexican

☐

Western

☐

Type

☐

Other (Specify)

0

Yellow Bean Mosaic Virus (BYMV)

1

Curly Top Virus (BCTV)

1

Other (Specify Disease and Race or Strain)

14

**11. INSECT RESISTANCE:** 0 = Not Tested 1 = Susceptible 2 = Resistant 3 = Intermediate 4 = Tolerant

- |  |   |
|--|---|
| <input type="checkbox"/> Aphid                 | <input type="checkbox"/> Root Knot Nematode |
| <input type="checkbox"/> Leafhopper            | <input type="checkbox"/> Seed Corn Maggot   |
| <input type="checkbox"/> Lygus                 | <input type="checkbox"/> Thrips             |
| <input type="checkbox"/> Pod Borer             | <input type="checkbox"/> Weevils            |
| <input type="checkbox"/> Other (Specify) _____ |   |

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**12. PHYSIOLOGICAL RESISTANCE:** 0 = Not Tested 1 = Susceptible 2 = Resistant 3 = Intermediate 4 = Tolerant

- |  |                                |                                  |
|--|--------------------------------|----------------------------------|
| <input type="checkbox"/> Heat                  | <input type="checkbox"/> Cold  | <input type="checkbox"/> Drought |
| <input type="checkbox"/> Air Pollution         | <input type="checkbox"/> Ozone |                                  |
| <input type="checkbox"/> Other (Specify) _____ |                                |                                  |

**13. COMMENTS:**



U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE**EXHIBIT E**  
**STATEMENT OF THE BASIS OF OWNERSHIP**

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). The information is held confidential until the certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S)  Syngenta Seeds, Inc.	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER	3. VARIETY NAME  Herrera
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP, and Country)  600 N. Armstrong Place Boise, ID 83704	5. TELEPHONE (include area code)  (208) 322-7272	6. FAX (include area code)  (208) 327-9319
7. PVPO NUMBER		2006 00 170

8. Does the applicant own all rights to the variety? Mark an "X" in the appropriate block. If no, please explain.



YES



NO

9. Is the applicant (individual or company) a U.S. national or a U.S. based company? If no, give name of country.



YES



NO

10. Is the applicant the original owner?



YES



NO

If no, please answer one of the following:

a. If the original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. National(s)?



YES



NO

If no, give name of country

b. If the original rights to variety were owned by a company(ies), is (are) the original owner(s) a U.S. based company?



YES



NO

If no, give name of country

11. Additional explanation on ownership (Trace ownership from original breeder to current owner. Use the reverse for extra space if needed):

Garden Bean Herrera was bred and developed by plant breeders employed by Syngenta Seeds. By agreement between the employee and Syngenta Seeds, all rights to any invention, discovery or development made by the employee while employed by Syngenta Seeds were assigned to Syngenta Seeds, with no rights retained by the employee.

**PLEASE NOTE:**

Plant variety protection can only be afforded to the owners (not licensees) who meet the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.
2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.
3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed the final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definitions.

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 0.1 hour per response, including the time for reviewing the instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

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AGRICULTURAL MARKETING SERVICE  
SCIENCE AND TECHNOLOGY  
PLANT VARIETY PROTECTION OFFICE  
BELTSVILLE, MD 20705

NAME OF OWNER (S) Syngenta Seeds, Inc.	600 North Armstrong Place Boise, ID 83704 USA	Country) TEMPORARY OR EXPERIMENTAL DESIGNATION
NAME OF OWNER REPRESENTATIVE (S) Kim Briggs	ADDRESS (Street and No. or RD No., City, State, and Zip Code and Country) 6338 Highway 20-26 Nampa, ID 83687	VARIETY NAME Herrera FOR OFFICIAL USE ONLY PVPO NUMBER 200600170

I do hereby declare that during the life of the certificate a viable sample of propagating material of the subject variety will be deposited, and replenished as needed periodically, in a public repository in the United States in accordance with the regulations established by the Plant Variety Protection Office.

Kim Briggs  
Signature

February 14, 2007  
Date

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